

**AMENDMENTS TO THE CLAIMS:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**LISTING OF CLAIMS:**

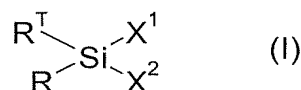
1. (Currently Amended) A process for creating a carbon-carbon bond by coupling a transferable group to an acceptor group comprising the steps of:

a) activating a siliceous compound comprising a group which can be transferred by an activating agent;

b) adding a derivative carrying an acceptor group and, simultaneously or consecutively, in any order; and

c) adding a compound of palladacycle type which acts as a catalyst of the reaction of coupling the transferable group to the acceptor group by creation of said carbon-carbon bond,

in which the siliceous compound carrying a transferable group is a dihalosilane of formula (I):



where:

$X^1$  and  $X^2$ , which are identical or different, are, independently of one another, a halogen atom selected from fluorine, chlorine, bromine and iodine;

$R^T$  is the transferable group and is selected from an aryl, vinyl and allyl radical, wherein said radical may optionally be substituted; and

R is selected from the hydrogen atom, the  $R^T$  radical defined above, and a linear or branched alkyl radical comprising from 1 to 6 carbon atoms;

wherein said process is performed without the use of a phosphine.

2. (Previously Presented) The process as claimed in claim 1, in which the activating agent is an anionic nucleophilic compound selected from hydroxides of alkali metals and alkaline earth metals, alkoxides, carbonates, and amides.

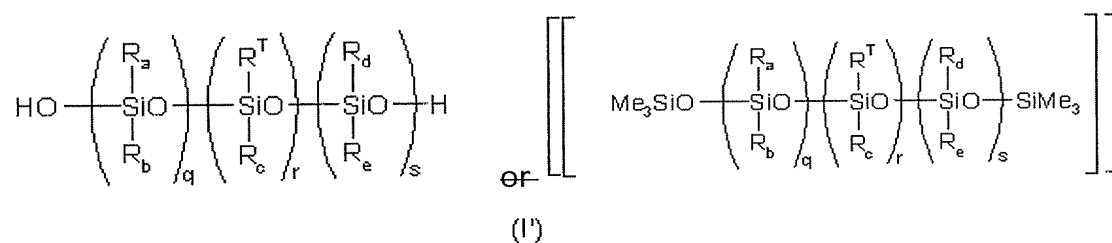
3. (Previously Presented) The process as claimed in claim 2, in which the activating agent is selected from sodium hydroxide, lithium hydroxide, potassium hydroxide, barium hydroxide, barium oxide and the potassium salt of hexamethyldisilazane.
4. (Cancelled)
5. (Currently Amended) The process as claimed in claim 1, in which the dihalosilane of formula (I) has the following characteristics, taken in isolation or in combination:
  - $X^1$  and  $X^2$  are identical and are each a bromine atom or a chlorine atom;
  - R is chosen from the hydrogen atom, the  $R^T$  radical defined below and a linear or branched alkyl radical comprising from 1 to 6 carbon atoms[[.]]; and
  - $R^T$  is an optionally substituted phenyl radical.
6. (Previously Presented) The process as claimed in claim 5, in which the dihalosilane of formula (I) is a chlorosilane.
7. (Previously Presented) The process as claimed in claim 6, in which the dihalosilane of formula (I) is diphenyldichlorosilane, methylphenyldichlorosilane or methyltolylidichlorosilane.
8. (Currently Amended) A process for creating a carbon-carbon bond by coupling a transferable group to an acceptor group comprising the steps of:
  - a) activating a siliceous compound carrying a group which can be transferred by an activating agent;
  - b) adding a derivative carrying an acceptor group and, simultaneously or consecutively, in any order, and

c) adding a compound of palladacycle type which acts as catalyst of the reaction of coupling the transferable group to the acceptor group by creation of said carbon-carbon bond,

in which the siliceous compound carrying a transferable group is a silicone oil;

wherein said process is performed without the use of a phosphine.

9. (Currently Amended) The process as claimed in claim 8, in which the silicone oil is a polysiloxane of formula (I'):



in which:

$R^T$ , a transferable group, is an optionally substituted phenyl radical;

$R_a$ ,  $R_b$ ,  $R_c$ ,  $R_d$  and  $R_e$ , which are identical or different, are selected, independently of one another, from the hydrogen atom, a linear or branched alkyl radical comprising from 1 to 6 carbon atoms and the  $R^T$  radical defined above;

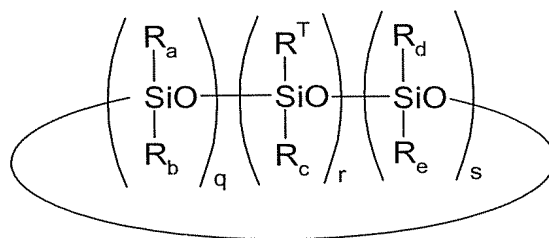
$r$  is an integer from 1 and 10, ;

$q$  is 0 or an integer from 1 and 9, ; and

$s$  is 0 or an integer from 1 and 9, ,

the sum  $q + r + s$  being from 4 and 10,.

10. (Previously Presented) The process as claimed in claim 9, in which the polysiloxane is in the cyclic form:



11. (Currently Amended) The process as claimed in claim 1, in which the compound carrying an acceptor group corresponds to the formula (II):

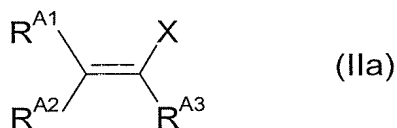


in which:

$R^A$  is a hydrocarbon group (acceptor group) comprising from 2 to 20 carbon atoms and has a double bond situated in the  $\alpha$  position with respect to a leaving group X or a monocyclic or polycyclic, aromatic, carbocyclic and/or heterocyclic group; and

X is a leaving group, selected from the group consisting of a halogen atom[[ ]], a perhaloalkyl group, and a sulfonic ester group of formula  $-\text{OSO}_2\text{-R}'$ , in which  $\text{R}'$  is a hydrocarbon group.

12. (Previously Presented) The process as claimed in claim 1, in which the compound carrying an acceptor group corresponds to the formula (IIa):



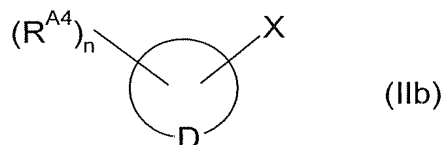
in which:

$R^{A1}$ ,  $R^{A2}$  and  $R^{A3}$ , which are identical or different, are selected, independently of one another, from a hydrogen and a hydrocarbon group having from 1 to 20 carbon atoms which can be a saturated or unsaturated and linear or branched aliphatic group; a saturated, unsaturated or aromatic, monocyclic or polycyclic, carbocyclic or heterocyclic group; or a sequence of aliphatic and/or carbocyclic and/or heterocyclic groups; and

X symbolizes a leaving group selected from the group consisting of a halogen atom, a perhaloalkyl group, and a sulfonic ester group of formula  $-\text{OSO}_2\text{-R}'$ , in which  $\text{R}'$  is a hydrocarbon group.

13. (Previously Presented) The process as claimed in claim 12, in which the compound carrying an acceptor group is selected from vinyl chloride, vinyl bromide,  $\beta$ -bromostyrene and  $\beta$ -chlorostyrene.

14. (Previously Presented) The process as claimed in claim 1, in which the compound carrying an acceptor group corresponds to the formula (IIb):



in which:

D symbolizes the residue of a ring forming all or part of a monocyclic or polycyclic, aromatic, carbocyclic and/or heterocyclic system,

X is a leaving group selected from a bromine atom or a chlorine atom,

$R^{A4}$ , which are identical or different, are substituents on the ring, and

n is the number of substituents on the ring.

15. (Currently Amended) The process as claimed in claim 14, in which the compound carrying an acceptor group corresponds to the formula (IIb) where D is the residue of a cyclic compound ~~which preferably has at least 4 atoms in the ring,~~ which is optionally substituted and which represents at least one of the following rings:

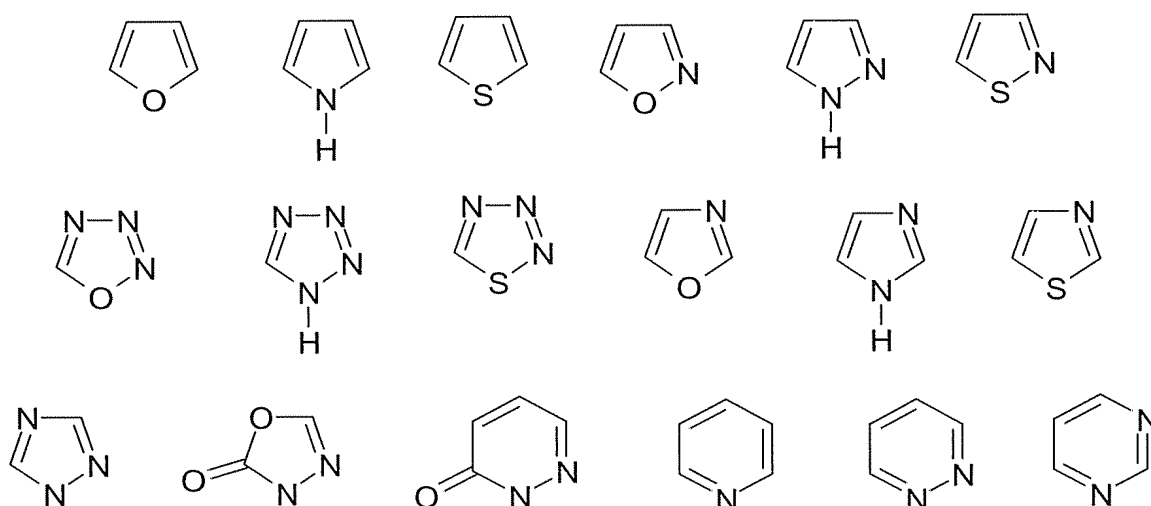
- \* a monocyclic aromatic carbocycle or a polycyclic aromatic carbocycle comprising at least 2 aromatic carbocycles which form, between them, ortho- or ortho- and peri-fused systems or a compound composed of at least 2 carbocycles, of which one of said carbocycles is aromatic, and the at least 2 carbocycles form, between them, ortho- or ortho- and peri-fused systems;

- \* a monocyclic aromatic heterocycle comprising at least one heteroatom selected from oxygen, nitrogen and sulfur, or a polycyclic aromatic heterocycle comprising at least 2 heterocycles comprising at least one heteroatom in each ring, wherein at least one of the two rings of which is aromatic, which form, between them, ortho- or ortho- and peri-fused systems, or a compound comprising at least one carbocycle and at least one heterocycle, wherein at least one of the rings is aromatic, and said at least one carbocycle and at least one heterocycle form between them, ortho- or ortho- and peri-fused systems.

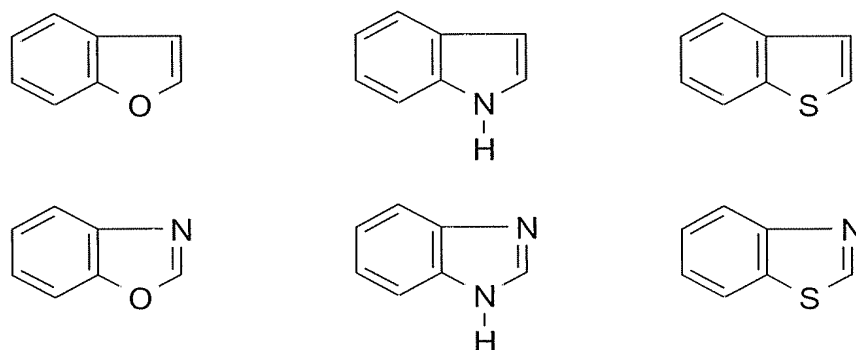
16. (Previously Presented) The process as claimed in claim 15, in which the compound carrying an acceptor group corresponds to the formula (IIb) where D is the residue of an optionally substituted aromatic carbocycle, an aromatic bicycle comprising two aromatic carbocycles, or of a partially aromatic bicycle comprising two carbocycles, one of the two of which is aromatic.

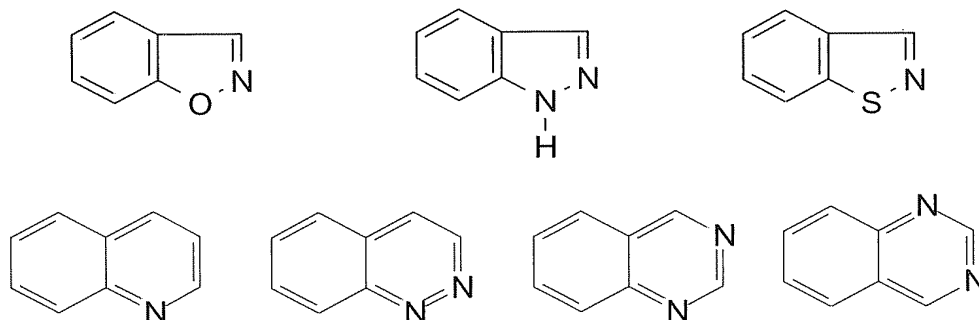
17. (Previously Presented) The process as claimed in claim 15, in which the compound carrying an acceptor group corresponds to the formula (IIb) where D is the residue of a heterocycle selected from the group consisting of:

- an aromatic heterocycle selected from the group consisting of:



- an aromatic bicycle comprising an aromatic carbocycle and an aromatic heterocycle, said aromatic bicycle selected from the group consisting of:

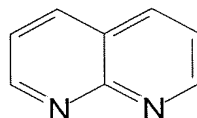




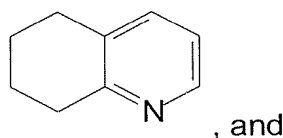
- a partially aromatic bicycle comprising an aromatic carbocycle and a heterocycle, said partially aromatic bicycle selected from the group consisting of:



- an aromatic bicycle comprising two aromatic heterocycles:



- a partially aromatic bicycle comprising a carbocycle and an aromatic heterocycle:



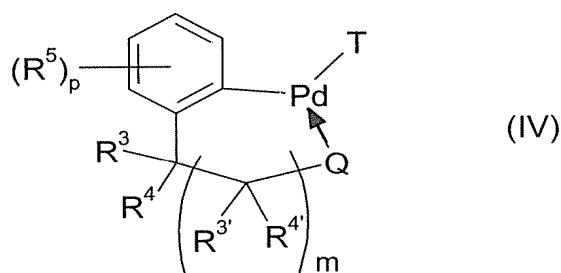
, and

- a tricycle comprising at least one carbocycle or one heterocycle which is aromatic, said tricycle selected from the group consisting of:



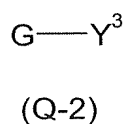
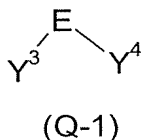
18. (Previously Presented) The process as claimed in claim 1, in which the compound carrying an acceptor group is selected from p-chlorotoluene, p-bromoanisole and p-bromotrifluoro-methylbenzene.

19. (Currently Amended) The process as claimed in claim 1, in which the palladacycle compound corresponds to formula (IV):



in which:

\* Q is a group of formula (Q-1) or a group of formula (Q-2):



in which groups:

- E is selected from a nitrogen, phosphorus and arsenic atom;
- G is selected from a sulfur, oxygen, selenium and carbon atom; and
- Y<sup>3</sup> and Y<sup>4</sup>, which are identical or different, are selected from:
  - a linear or branched alkyl radical having 1 to 16 carbon atoms which is optionally substituted by one or more phenyl, hydroxyl, halogen, nitro, alkoxy or alkoxycarbonyl groups or atoms, the alkoxy groups having 1 to 4 carbon atoms;
  - a linear or branched alkenyl radical having 2 to 12 carbon atoms;
  - an aryl radical having 6 to 10 carbon atoms which is optionally substituted by one or more alkyl groups having 1 to 4 carbon atoms, alkoxy or alkoxycarbonyl groups, the alkoxy radical having 1 to 4 carbon atoms, or halogen atoms;



it being possible for  $Y^3$  to  $Y^4$  together to form a linear or branched alkylene, alkenylene or alkadienylene radical having from 3 to 6 carbon atoms;

it being possible for  $Y^3$  or  $Y^4$  to form, with  $R^4$  or  $R^{4'}$  and with the atoms to which they are connected, an unsaturated or completely or partially saturated unsaturated 5- or 6-membered ring;

it additionally being possible for one of  $Y^3$  or  $Y^4$  to be hydrogen, and the other being as defined above;

it additionally being possible for  $Y^3$  to form a bond with  $R^3$  (or  $R^{3'}$ ) when E is the nitrogen atom,  $Y^4$  can also be a hydroxyl group;

\* T is a counterion selected from anions of the following groups: -F, -Cl, -Br, -I, -CN, -OCN, -SCN, -CF<sub>3</sub>, -OCF<sub>3</sub>, -SCF<sub>3</sub>, -ONO, -ONO<sub>2</sub>, -OSO<sub>2</sub>N(R<sub>6</sub>)(R<sub>7</sub>), -SO<sub>2</sub>R<sub>8</sub>, -OSO<sub>2</sub>R<sub>8</sub>, -O(O)CR<sub>8</sub>, -SR<sub>8</sub>, -N<sub>3</sub> and -OR<sub>8</sub>;

\*  $R^3$ ,  $R^4$ ,  $R^{3'}$  and  $R^{4'}$ , which are identical or different, are selected from the hydrogen atom and a linear or branched alkyl radical comprising from 1 to 6 carbon atoms; preferably,  $R^3$ ,  $R^4$ ,  $R^{3'}$  and  $R^{4'}$ , which are identical or different, are the hydrogen atom or the methyl radical, more preferably the hydrogen atom; it additionally being possible for  $R^3$ ,  $R^4$ ,  $R^{3'}$  or  $R^{4'}$  to form, with  $Y^3$  and/or  $Y^4$  and/or  $R^5$ , together with the atoms to which they are connected, an unsaturated or completely or partially saturated 5- or 6-membered ring;

\*  $R^5$  a group selected from the linear or branched alkyl group having from 1 to 6 carbon atoms; a linear or branched alkenyl or alkynyl group having from 2 to 6 carbon atoms; a linear or branched alkoxy or alkylthio group having from 1 to 6 carbon atoms; an alkenyloxy group; a cyclohexyl, phenyl or benzyl group; an acyl group having from 2 to 6 carbon atoms; a group of formula - $R^1$ -OH, - $R^1$ -SH, - $R^1$ -COOR<sup>2</sup>, - $R^1$ -CO-R<sup>2</sup>, - $R^1$ -CHO, - $R^1$ -CN, - $R^1$ -N(R<sup>2</sup>)<sub>2</sub>, - $R^1$ -CO-N(R<sup>2</sup>)<sub>2</sub>, - $R^1$ -SO<sub>3</sub>Z, - $R^1$ -SO<sub>2</sub>Z, - $R^1$ -Y or - $R^1$ -CF<sub>3</sub>; in which formulae  $R^1$  is a valency bond or a saturated or unsaturated, linear or branched, divalent hydrocarbon group having from 1 to 6 carbon atoms; the  $R^2$  groups, which are identical or different, are a hydrogen atom or a linear or branched alkyl group having from 1 to 6 carbon atoms or a phenyl group; Z is a hydrogen atom, an alkali metal, preferably sodium, or an  $R^2$  group; Y symbolizes a halogen atom;  $R^5$  can

additionally form, with  $R^3$ ,  $R^4$ ,  $R^{3'}$  or  $R^{4'}$ ,  $Y^3$ ,  $Y^4$  or another  $R^5$  substituent, together with the atoms to which they are connected, an unsaturated or completely or partially saturated 5- or 6-membered ring;

\*  $R^6$  and  $R^7$ , which are identical or different, are the hydrogen atom or a linear or branched  $C_1$ - $C_{16}$  alkyl group;

\*  $R^8$  is a linear or branched  $C_1$ - $C_{16}$  alkyl group;

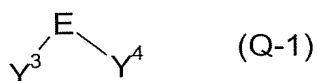
\*  $p$  is the number of substituents on the ring, and has a value of 0, 1, 2, 3 or 4; and

\*  $m$  is 0 or 1,

wherein the palladacycle of formula (IV) can be present in the dimeric form.

20. (Previously Presented) The process as claimed in claim 19, in which the palladacycle of formula (IV) has one or more of the following characteristics, taken in isolation or in combination:

\*  $Q$  is a group of formula (Q-1):



in which:

-  $E$  is the nitrogen atom;

-  $Y^3$  and  $Y^4$ , which are identical or different, are a linear or branched alkyl radical having 1 to 16 carbon atoms, or one of  $Y^3$  or  $Y^4$  is hydrogen, with the other being as defined above;

- it additionally being possible for  $Y^3$  to form a bond with  $R^3$  (or  $R^{3'}$ ) when  $E$  is the nitrogen atom and, in this case,  $Y^4$  can also be the hydroxyl group;

\*  $T$  is a halogen, a triflate or acetate group;

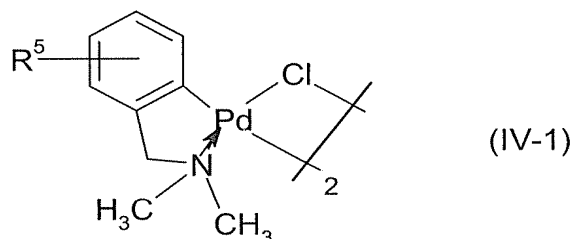
\*  $R^3$ ,  $R^4$ ,  $R^{3'}$  and  $R^{4'}$ , which are identical or different, are the hydrogen atom or the methyl radical;

\*  $R^5$ , which are identical or different, are one of the groups selected from a linear or branched alkyl group having from 1 to 6 carbon atoms, or a halogen atom;

\* p is 0, 1 or 2; and

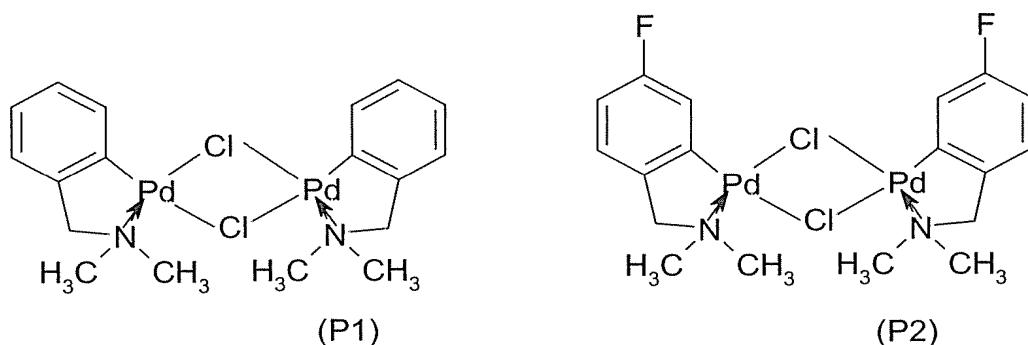
\* m is 0.

21. (Previously Presented) The process as claimed in claim 19, in which the palladacycle corresponds to the following formula (IV-1):



in which R<sup>5</sup>, which are identical or different, are selected from the group consisting of hydrogen, a linear or branched alkyl group having from 1 to 6 carbon atoms, and a halogen atom.

22. (Previously Presented) The process as claimed in claim 21, in which the palladacycle is selected from the palladacycle P1 and the palladacycle P2:



23. (Previously Presented) The process as claimed in claim 1, in which the amount of catalyst employed is generally between 0.0005 mol% and 2 mol%, with respect to the compound carrying the acceptor group.

24. (Previously Presented) The process as claimed in claim 36, in which the solvent in step a) is dioxane or anisole.

25. (Previously Presented) The process as claimed in claim 1, further comprising, between step b) and step c), the step of adding a phase transfer agent.

26. (Previously Presented) The process as claimed in claim 25, in which the phase transfer agent is selected from tetrabutylammonium iodide, tetrabutylammonium chloride, tetrabutylammonium bromide, tetramethylammonium bromide and cetyltrimethylammonium bromide.

27. (Previously Presented) The process as claimed in claim 37, comprising the steps of:

- a) activating a dichlorosilane by an alkali metal or alkaline earth metal hydroxide;
- b) adding an aryl halide;
- c) adding a palladacycle catalyst, optionally in the presence of a phase transfer agent; and
- d) separating and isolating the product of the coupling reaction.

28. (Previously Presented) The process as claimed in claim 27, comprising the steps of:

- a) activating diphenyldichlorosilane by sodium hydroxide;
- b) adding 4-trifluoromethyl-1-bromobenzene;
- c) adding palladacycle catalyst P2, in the presence of tetrabutylammonium bromide as phase transfer agent; and
- d) separating and isolating the product of the coupling reaction, which is [4'-(trifluoromethyl)phenyl]benzene.

29. (Previously Presented) The process as claimed in claim 27, comprising the steps of:

- a) activating methylphenyldichlorosilane by sodium hydroxide;
- b) adding 4-trifluoromethyl-1-bromobenzene;
- c) adding palladacycle catalyst P1, in the presence of tetrabutylammonium bromide as phase transfer agent; and

d) separating and isolating the product of the coupling reaction, which is [4'-(trifluoromethyl)phenyl]benzene.

30. (Previously Presented) The process as claimed in claim 27, comprising the steps of:

- a) activating methylphenyldichlorosilane by sodium hydroxide;
- b) adding 2-methyl-1-bromobenzene;
- c) adding palladacycle catalyst P1, in the presence of tetrabutylammonium bromide as phase transfer agent; and
- d) separating and isolating the product of the coupling reaction, which is (2'-methylphenyl)benzene.

31. (Previously Presented) The process as claimed in claim 27, comprising the steps of:

- a) activating methylphenyldichlorosilane by sodium hydroxide;
- b) adding 4-methoxy-1-bromobenzene;
- c) adding palladacycle catalyst P1, in the presence of tetrabutylammonium bromide as phase transfer agent; and
- d) separating and isolating the product of the coupling reaction, which is (4'-methoxyphenyl)benzene.

32. (Previously Presented) The process as claimed in claim 37, wherein steps a, b and c comprise:

- a) activating a silicone oil by an alkali metal or alkaline earth metal hydroxide;
- b) adding an aryl halide; and
- c) adding a palladacycle catalyst, optionally in the presence of a phase transfer agent.

33. (Previously Presented) The process as claimed in claim 32, comprising the steps of:

- a) activating methylphenylpolysiloxane by sodium hydroxide;
- b) adding 4-trifluoromethyl-1-bromobenzene ;

c) adding palladacycle catalyst P1; and  
 d) separating and isolating the product of the coupling reaction, which is  
 [4'-(trifluoromethyl)phenyl]benzene.

34. (Previously Presented) The process as claimed in claim 32, comprising the steps of:

a) activating methylphenylpolysiloxane by sodium hydroxide;  
 b) adding 4-methoxy-1-bromobenzene ;  
 c) adding palladacycle catalyst P1; and  
 d) separating and isolating the product of the coupling reaction, which is  
 (4'-methoxyphenyl)benzene.

35. (Previously Presented) The process as claimed in claim 1, in which step a) is carried out in a medium comprising a polar solvent.

36. (Currently Amended) The process as claimed in claim 35, in which the polar solvent in step a) is selected from dioxane, tetrahydrofuran, anisole, dibutyl ether, methyl tert-butyl ether, ethylene glycol diethyl ether, diethylene glycol diethyl ether[[,] and diisopropyl ether, ~~dioxane and anisole~~.

37. (Previously Presented) The process as claimed in claim 1, further comprising the step:

d) separating and isolating the product of the coupling reaction.

38. (Previously Presented) The process as claimed in claim 16, in which the compound carrying an acceptor group corresponds to the formula (IIb) where D is selected from benzene, naphthalene, or 1,2,3,4-tetrahydronaphthalene.

39. (Previously Presented) The process as claimed in claim 5, where R in formula (I) is a linear or branched alkyl radical comprising from 1 to 6 carbon atoms selected

from the group consisting of methyl, ethyl, propyl, isopropyl, butyl, *tert*-butyl, *sec*-butyl, isobutyl, pentyl, neopentyl and n-hexyl radical.

40. (Previously Presented) The process as claimed in claim 20, in which  $Y^3$  and  $Y^4$ , which are identical or different, are a linear or branched alkyl radical having 1 to 6 carbon atoms, or one of  $Y^3$  or  $Y^4$  is hydrogen, with the other being a linear or branched alkyl radical having 1 to 6 carbon atoms; where it is possible for  $Y^3$  to form a bond with  $R^3$  (or  $R^{3'}$ ) when E is the nitrogen atom and, in this case,  $Y^4$  can also be the hydroxyl group.

41. (Previously Presented) The process as claimed in claim 40, in which  $Y^3$  and  $Y^4$ , which are identical or different, are a methyl radical; or one of  $Y^3$  or  $Y^4$  is hydrogen, with the other being a linear or branched alkyl radical having 1 to 6 carbon atoms; where it is possible for  $Y^3$  to form a bond with  $R^3$  (or  $R^{3'}$ ) when E is the nitrogen atom and, in this case,  $Y^4$  can also be the hydroxyl group.

42. (Previously Presented) The process as claimed in claim 8, in which the amount of catalyst employed is generally between 0.0005 mol% and 2 mol%, with respect to the compound carrying the acceptor group.

43. (New) The process as claimed in claim 15, wherein D is the residue of a cyclic compound having at least 4 atoms in the ring.

44. (New) The process as claimed in claim 19, wherein Z in  $R^5$  is sodium.